National Institute of Allergy and Infectious Diseases
2004 Summit on the State of Anti-Infective Development

August 16-17, 2004
Bethesda, Maryland

Meeting Summary

This report is dedicated to the memory of
John R. La Montagne, Ph.D., 1943 - 2004
NIAID Deputy Director

National Institute of Allergy and Infectious Diseases
2004 Summit on the State of Anti-Infective Development
August 16-17, 2004
Bethesda, Maryland

Introduction

The National Institute of Allergy and Infectious Diseases (NIAID) sponsored the 2004 Summit on the State of Anti-Infective Development to gain a better understanding of the current state of anti-infective development, identify potential roles for NIAID, and optimize future opportunities for the Institute to contribute to the development process. The 2004 conference built on the Summit on the Development of Infectious Disease Therapeutics, which was held in September 2000. This report presents highlights of the 2004 summit and summarizes recommendations for NIAID and other organizations.

Speakers and summit participants included representatives from pharmaceutical companies, biotechnology companies, academia, public-private partnerships (PPPs), NIAID, the World Health Organization (WHO), Infectious Diseases Society of America (IDSA), Centers for Disease Control and Prevention (CDC), U.S. Food and Drug Administration (FDA), Department of Defense (DOD), Department of Health and Human Services (DHHS), and the NIH Office of Technology Transfer. The agenda is provided in the appendix.

Presentation and panel discussion topics included: demand and supply of anti-infectives; perspectives on scientific and strategic opportunities, challenges, barriers and risks to anti-infective discovery and development; regulatory issues; and the potential role for NIAID in addressing the problem of anti-infective development. NIAID Director Dr. Anthony S. Fauci provided brief introductory remarks in which he emphasized the dynamic nature of the field of infectious disease, and the need for unique partnerships to address ongoing microbial threats.

Demand and Supply

Session speakers presented background information on several overarching issues affecting the demand and supply of anti-infectives, including the need for new medicines in the United States; the need for new medicines for neglected diseases; and issues impeding the discovery, development, and commercialization of new antimicrobials.

The Need for New Medicines in the U.S.

Dr. John Bartlett, representing the Infectious Diseases Society of America (IDSA), briefly summarized the recent IDSA report, Bad Bugs, No Drugs, As Antibiotic Discovery Stagnates…A Public Health Crisis Brews (www.idsociety.org/pa/IDSA_Paper4_final_web.pdf). The report, which was prepared by the IDSA Taskforce on Antimicrobial Availability, outlines the problems of antimicrobial resistance in the United States and the lack of new antibiotics in the pipeline to treat resistant infections. Dr. Bartlett noted that since the 1980's there has been a significant increase in the rates of antimicrobial resistance that are of public health concern. Resistant bacteria are found not only in the nosocomial situation, but also in the community, with the types of resistant organisms continually evolving.

The Need for New Medicines for Neglected Diseases

Dr. Janis Lazdins-Helds of the World Health Organization described the '10/90 gap' -- the fact that approximately 10 percent of annual funding for health research is spent on health problems that account for 90 percent of the global disease burden. The gap was first highlighted in 1990 by the Commission on Health Research for Development. Since then, the NIH budget has doubled and the balance in how health research funds are spent has improved. The case remains, however, that only a fraction of new chemical entities registered by western health authorities are specifically indicated for tropical diseases. Underserved diseases that affect large numbers of individuals worldwide include lower respiratory tract infections, which should be preventable; high disability diseases, such as filariasis and nematode infections; and those diseases causing long term, major organ system consequences such as Chagas' disease (cardiovascular) and schistosomiasis (liver).

Dr. Lazdins-Helds also noted that the recent entry of new research partners (such as the Gates Foundation and The Global Fund to Fight AIDS, Tuberculosis and Malaria) into this environment has made the situation both more promising and more complex. These entities now play a role in enhancing research activities, delivering products and services, and developing targeted initiatives such as the International AIDS Vaccine Initiative (www.iavi.org), Medicines for Malaria Venture (www.mmv.org), and Drugs for Neglected Diseases Initiative (www.dndi.org).

Issues Impeding the Discovery, Development and Commercialization of New Antibacterials

Dr. Martin Rosenberg, who has extensive experience working with and advising both large pharmaceutical companies and biotechnology companies and serves as a consultant to NIAID on drug development issues, addressed corporate issues that impact decisions about pursuing anti-infective development. Dr. Rosenberg emphasized the following points that provide disincentives for companies to invest in new antibacterials:

- corporate resources are allocated to areas providing the best commercial opportunities, which recently has not included development of antibiotics;
- most bacterial infections can be effectively controlled using current antibiotics;
- laboratory detected susceptibility to the antimicrobial does not necessarily equate with the ability of a drug to be effective clinically;
- new products are often not that different from current antibiotics in both clinical and commercial experience;
- there has been a poor success rate in developing novel broad spectrum antibiotics;
- narrow spectrum agents do not provide sufficient return on investment;
- regulatory hurdles, including restricted labeling and the number of trials required to cover multiple indications; and
- the need for large, expensive safety studies prior to approval by FDA as well as the clinical trial requirements needed to demonstrate non-inferiority.